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Phone Analytics for Groundcrew Efficiency

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Phone Analytics for Ground Crew Efficiency

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Abstract

The Phone Analytics for Ground Crew Efficiency (PAGE) project is a proof-of-concept mobile application that revolves around exploring how mobile G.P.S. technologies can help PPL Corporation better track its ground crews on a daily basis. Specifically, PPL is interested in capturing data such as driving patterns, worksite locations, and damage reports in a much more automated and granular fashion. The first half of the project consisted of researching business requirements, project constraints, and designing the application, whereas the second half consisted of the programming and deployment of the team's solution.

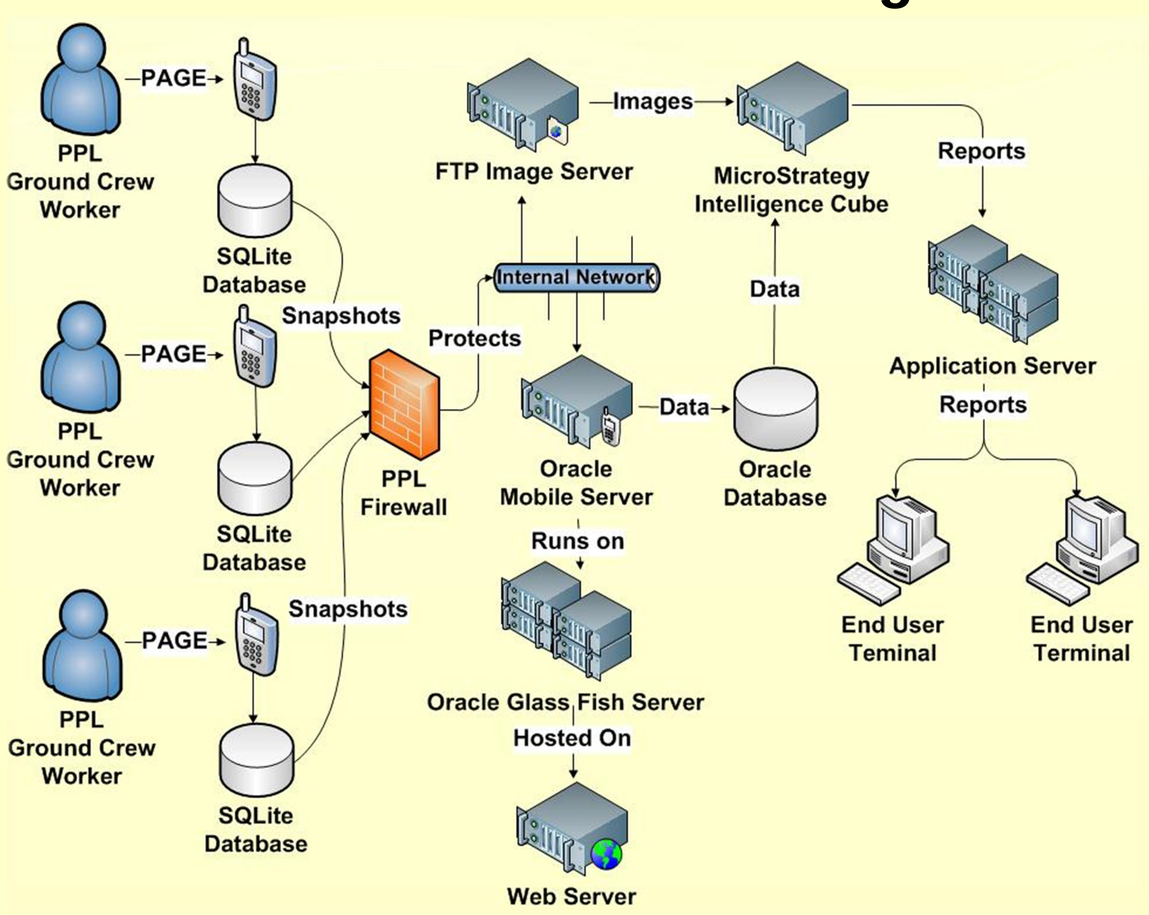
Business Requirements

- Runs on the latest stable release of the Android operating system
- Leverages G.P.S. technologies for data gathering and route tracking
- Takes geo-coded images of worksites
- Allows for asynchronous states between the application and back-end databases
- Allows for scenarios in which cellular and G.P.S. signals are not available
- Integrates seamlessly with Oracle databases
- Integrates seamlessly with MicroStrategy Business Intelligence package

Technical Architecture

Mobile Phone Specifications	Server Specifications
Android Operating System 4.1	Windows Server 2008 SP 1
1 GB RAM	Intel Core 2 Duo CPU @ 2.66GHz
16 GB Flash Storage	8 GB RAM
High Resolution Camera	160 GB Stable Storage
SQLite Database	Oracle Database 11g R2
G.P.S. Capable	MicroStrategy Business Intelligence
	Oracle Mobile Server
	Oracle GlassFish Server

Technical Architecture Diagram

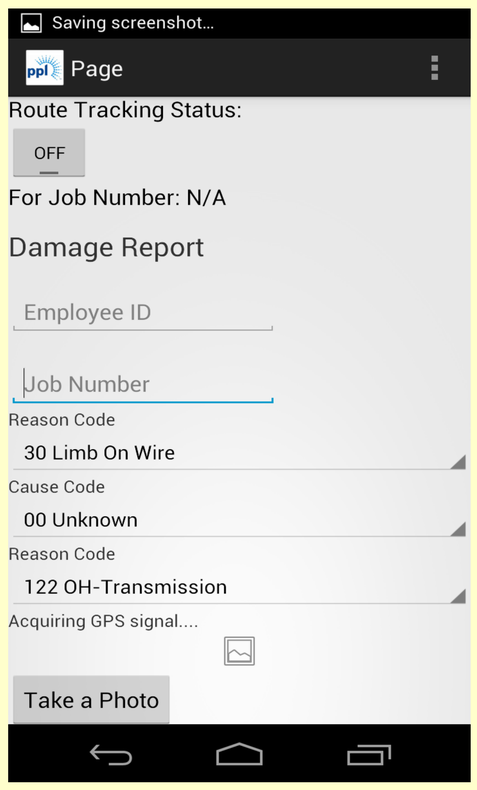


Results

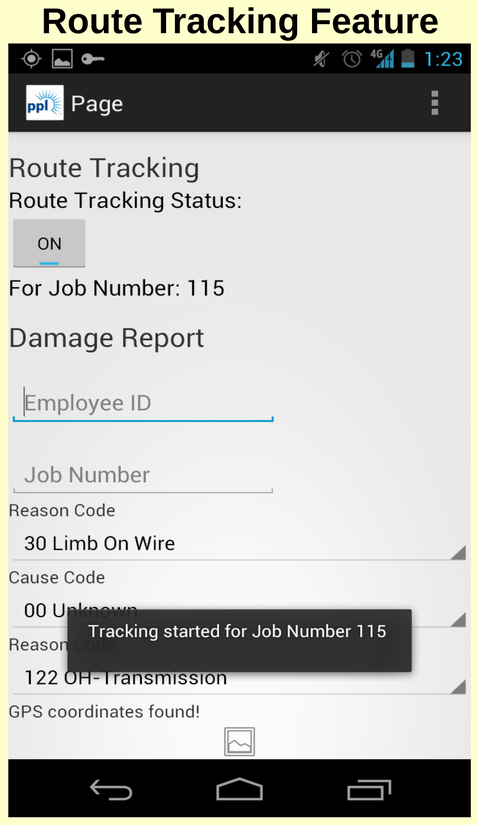
- Application was successfully coded on schedule and within budget
- Application was successfully deployed on testing infrastructure
- Flawless integration with MicroStrategy Business Intelligence tool
- High level of client satisfaction
- Formation of research alliance between the CSB program and PPL
- Attracted Air Products and Chemicals, Inc.'s interest in researching the business value of mobile technologies
- Formation of research alliance between the CSB program and Air Products and Chemicals Inc.

Final Deliverable

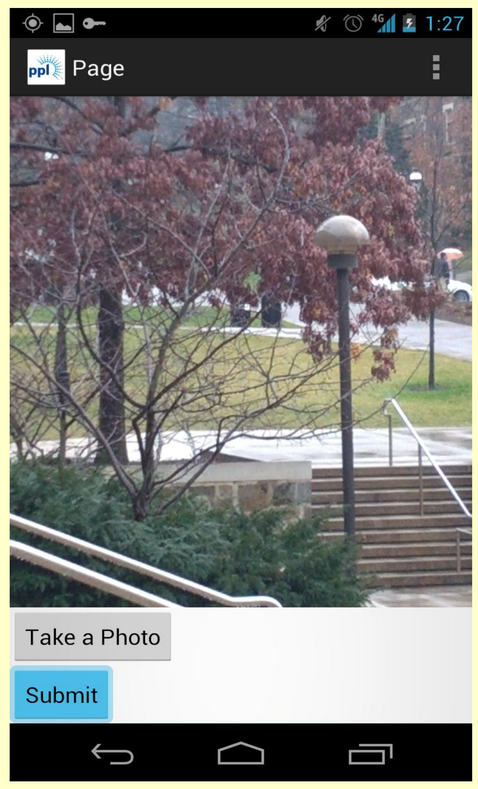
Default User Interface



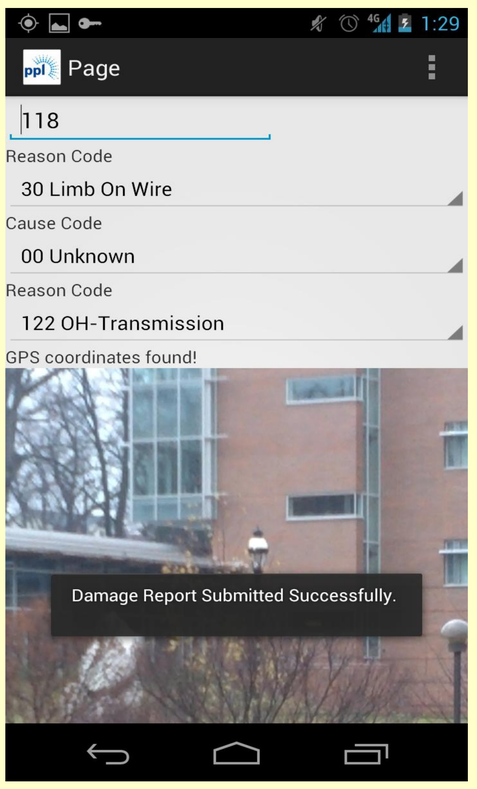
Route Tracking Feature



Photograph Feature



Submission of Final Report



Future Work

- Expansion of application to iOS tablets
- Construction of more advanced MicroStrategy dashboards
- Extensive unit, regression, and acceptance testing
- Deployment on a production level

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